



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,590	01/18/2001	Masashi Kuno	108390	4666
25944	7590	07/06/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			STEPHANY, TIMOTHY J	
		ART UNIT	PAPER NUMBER	
		2622	4	
DATE MAILED: 07/06/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/761,590	KUNO ET AL.
	Examiner	Art Unit
	Timothy J. Stephany	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 January 2001.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-22 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____ .

DETAILED ACTION

Allowable Subject Matter

Claims 8, 9, 18 and 19 are potentially allowable over the prior art, which does not describe, disclose, nor suggest the contents therein.

Claims 8, 9, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Specification

The disclosure is objected to because of the following informalities:

On page 2, line 11: grammatical error, "unnaturally-looking" should read "unnatural-looking".

On page 5, line 6: missing word, "for black component" should read "for the black component".

On page 6, line 20: missing word, "when black color component" should read "when the black color component".

Appropriate correction is required.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(b) because they are incomplete. 37 CFR 1.83(b) reads as follows:

When the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.

This applies to the method and apparatus as disclosed in the claims wherein the improvements over Figure 1 (in a system comparable to Figure 1) should be shown in a drawing.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the

appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1, 11, and 21 are objected to because of the following informalities: missing word in the phrase "data for black component" should read "data for the black component". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 11, and 21 and all their dependent claims are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The steps of receiving input image data for the four color components, dividing the input data for

black component into distribution data for the four color components and combining the distribution data for the color components and input image data as embodied in the independent claims are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The modification that is essential over the means in Figure 1 has been disclosed in the claims but not illustrated in the drawings. But the means steps that must be included in the drawings have not been disclosed in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-3, 6, 7, 11-13, 16, 17, 21 and 22 are rejected under 35 U.S.C. 102(e)
as being anticipated by Moroney ('434).

Regarding claim 1, the claim states the input of CMYK image data, dividing the black component (neutral) image data into a CMY and K distribution data, that can be taken to mean that the neutral image data is printed by CMY and K inks. Likewise, the color component (cyan, magenta and yellow) are printed with CMY inks. This situation

implies that the neutral is using less than 100% under-color removal (UCR) such that CMY and K are used when printing neutrals.

Moroney discloses as prior art the gray ramp wherein the gray (neutral) input are output as CMYK values wherein the printing is performed using CMY in the low density region, and CMYK from the point of a certain threshold (col. 4, lines 1-5 and lower-left in Figure 12). This is done for gray-component replacement, which means that components wherein there is a substantial gray component, whereas elsewhere cyan, magenta and yellow are preserved (col. 2, lines 4-8 and **86** in Figure 10).

Regarding **claim 2**, the claim states that the distribution data is zero when the input is below a certain threshold and increases as the input increases from this value. This too is shown as **153** in the lower-left graph in Figure 12.

Regarding **claim 3**, the claim states that the CMY values generate a grayscale that is the difference between the distribution data (K output) and the input black (neutral) component. This is shown in Figure 12 where the value of CMY **154** is achieved after subtracting **152** from **151**. In this case it is accepted that the curve **152** represents the amount to be removed and not the amount of black to be printed, but this is only a specific feature of the choice of the method of black generation. General UCR methods replace the amount of CMY subtracted away with K of an equal value.

Regarding **claim 6**, the claim states that the manner of combining the distribution data with the input image data is different depending upon the values of CMY. This has already been shown to occur in the range of color values under-which the gray-component replacement is applied (col. 2, lines 4-8 and **86** in Figure 10).

Regarding **claim 7**, the claim states that the distribution data for the black and input data for the black are combined, which is taken to mean that a look-up table (LUT) is generated. This LUT of input versus output values has already been shown in the lower-left of Figure 12.

Regarding **claims 11-13, 16 and 17**, Moroney inherently teaches the "data conversion apparatus" as the method includes an implied use of devices in a system such as the printer in Figures 1-7 and the buffer (72 in Figure 11) and the print-head (76 in Figure 11). Thus claims 11-13, 16 and 17 are rejected on the same justification as claims 1-3, 6 and 7, respectively.

Regarding **claims 21 and 22**, given that the use of a computer storage medium would be an implied means of accomplishing the method or configuring the apparatus. Thus claims 21 and 22 are rejected on the same justification as claims 1 and 7, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 10, 14, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moroney ('434) in view of Usami ('305).

Regarding **claim 5** (and thus **claim 4**), the claim states that within the tone values produced there is a patch that exists at an optical density value that is half that of the maximum black density (solid black patch).

Moroney discloses the prior art method in the claim 1 rejection above.

Moroney does not disclose expressly that there is a patch that exists at an optical density value that is half that of the maximum black density (solid black patch).

Usami discloses that the input maximum density value in YMC is converted into the density value which is approximately half of the maximum value of black. This can be extended to include a value that is exactly half by nature of the specification that it could be exactly half or close to half, such that a value of half is inclusive in this requirement. Further, the capability to be able to print a density value as a patch is obvious in a printing system when the use is evident.

Moroney & Usami are combinable because they are from the same field of endeavor and thus constitute analogous art, being that of color UCR techniques.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a value of CMY that is half that of the K value.

The suggestion/motivation for doing so would have been that the means of one UCR technique are applicable to anyone else seeking to use any other UCR technique.

Therefore, it would have been obvious to combine Moroney with Usami to obtain the invention as specified in claims 4 and 5.

Regarding **claim 10**, the claim states that the CMY data is subjected to a compression so that it does not reach a predetermined maximum tone value. It has already been shown that the CMY maximum value does not exceed about half of the value of K.

Regarding **claims 14, 15 and 20**, Moroney & Usami teaches the "data conversion apparatus" as the method includes an obvious use of devices in a system such as the printer in Figures 1-7 in Moroney and Figure 1 of Usami and the buffer (72 in Figure 11 in Moroney), the print-head (76 in Figure 11 in Moroney), and Circuits and Memory (Figure 2 in Usami). Thus claims 14, 15, and 20 are rejected on the same justification as claims 4, 5, and 10, respectively.

Additional Notes

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suzuki ('639), Kita ('440), Poe ('063) refer to gray-component replacement or UCR; Borrell ('340) and Matsui ('494) refer to using process black in low-density regions; Takeo ('795), Ogatsu ('956) and Abe ('314) refer to color correction with a CMYK input.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Stephany whose telephone number is 703-305-8951. The examiner can normally be reached on 8:30 am - 4:30 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



EDWARD COLES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600